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BRAKE HUGHES BELLERMANN LLP
c/o CPA Global
P.O. Box 52050
Minneapolis, MN 55402

EXAMINER	
JOO, JOSHUA	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,853	TZENG ET AL.	
	Examiner	Art Unit	
	JOSHUA JOO	2454	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

This Office action is in response to Applicant's communication filed on 06/22/2009.

Claims 1-4, 6-19 are pending for examination.

Response to Arguments

Rejection of claims 8-19 under 35 USC § 101 is withdrawn in view of Applicant's amendment.

Rejection of claim 5 under 35 USC § 112 second paragraph is withdrawn in view of Applicant's amendment.

Applicant's arguments with respect to claims 1-4, 6-19 have been considered but are moot in view of the new ground(s) of rejection. New ground(s) of rejection are necessitated by Applicant's amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 7-8, 11-12, 14, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu, US Publication #2003/0169734 (Lu hereinafter), in view of Szczepanek et al. US Patent #6,621,818 (Szczepanek hereinafter).

As per claim 1, Lu teaches substantially the invention as claimed including a method of handling datagrams in a network device coupled to other network devices, said method comprising:

receiving an incoming datagram at a port of the network device (Paragraphs 0070, 0074. Incoming packet.);

determining an egress port for the incoming datagram based on a destination address contained in the incoming datagram and a lookup of an address resolution lookup (ARL) table (Paragraph 0074. Lookup destination address information to obtain destination port.);

performing a lookup of the ARL table based on a source address contained in the incoming datagram to determine whether the source address has been learned previously (Paragraphs 0070, 0072. Determine that there is no corresponding entry for source address in the forwarding database.);

writing an entry into the ARL table when the source address has not been learned previously (Paragraphs 0067; 0070. Source address learning.);

determining whether the other network devices have learned the source address when the source address has been learned previously (Paragraph 0066. Forwarding databases have the same number of addresses. Paragraphs 0067; 0070. Determine corresponding address in neighboring switches including whether the address has expired. Paragraph 0080. Determine that switch L2 has been updated with same address.);

sending, by the network device, a learning message with the source address to the other network devices when it is determined that the other network devices have not learned the source address (Paragraphs 0067; 0070; 0072. Send refresh packet for the source address to neighboring switches); and

Lu does not specifically teach of continuing to relay the learning message from the network device to the other network devices until the learning message is returned to the network device from one of the other network devices.

Szczepanek teaches of learning source addresses, wherein a learning message comprising a source address to be learned is continued to relay from a network device to other network devices until

the message is returned to the network device from one of the other network devices (col. 21, lines 25-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to continually relay a learning message from the network device to the other network devices until the learning message is returned to the network device from one of the other network devices. The motivation for the suggested combination is that Szczepanek's teachings would improve Lu's teachings by enabling each switch to learn the source address and preventing unnecessary sending of packets that would occupy bandwidth.

As per claim 8, Lu teaches substantially the invention as claimed including a network device coupled to other network devices for handling datagrams comprising:

a plurality of ports for receiving an incoming datagram (Paragraph 0063. Eight-port switch. Paragraphs 0070, 0074. Incoming packet.);

one or more datagram processing devices;

a computer readable storage medium coupled with the one or more datagram processing devices, the computer readable storage medium having instructions stored thereon, wherein the instructions, when executed by the one or datagram processing devices, provide for implementing (Paragraph 0062. Switch.):

an address resolution lookup (ARL) table (Paragraph 0065. Forwarding database.);

means for determining an egress port for the incoming datagram based on a destination address contained in the incoming datagram (Paragraph 0074. Lookup destination address information to obtain destination port.);

lookup means for performing a lookup of the ARL table based on a source address contained in the incoming datagram to determine whether the source address has been learned previously (Paragraph 0070. Determine that there is no corresponding entry for source address in the forwarding database.);

writing means for writing an entry into the ARL table when the source address has not been learned previously (Paragraphs 0067; 0070. Source address learning.);

determining means for determining whether the other network devices have learned the source address when the source address has been learned previously (Paragraph 0066. Forwarding databases have the same number of addresses. Paragraphs 0067; 0070. Determine corresponding address in neighboring switches including whether the address has expired. Paragraph 0080. Determine that switch L2 has been updated with same address.); and

relaying means for relaying a learning message with the source address to the other network devices when it is determined that the other network devices have not learned the source address (Paragraphs 0067; 0070; 0072. Send refresh packet for the source address to neighboring switches.).

Lu does not specifically teach of continuing to relay the learning message until the learning message is returned to the network device from one of the other network devices.

Szczepanek teaches of learning source addresses, wherein a learning message comprising a source address to be learned is continued to relay from a network device to other network devices until the message is returned to the network device from one of the other network devices (col. 21, lines 25-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to continually relay a learning message from the network device to the other network devices until the learning message is returned to the network device from one of the other network devices. The motivation for the suggested combination is that Szczepanek's teachings would

improve Lu's teachings by enabling each switch to learn the source address and preventing unnecessary sending of packets that would occupy bandwidth.

As per claim 14, Lu teaches substantially the invention as claimed including a network device coupled to other network devices for handling datagrams comprising:

a plurality of ports configured to receive an incoming datagram (Paragraph 0063. Eight-port switch. Paragraphs 0070, 0074. Incoming packet.);

a computer readable storage medium coupled with the one or more datagram processing devices, the computer readable storage medium having instructions stored thereon, wherein the instructions, when executed by the one or datagram processing devices, provide for implementing (Paragraph 0062. Switch):

an address resolution lookup (ARL) table (Paragraph 0065. Forwarding database.);

an egress port determiner configured to determine an egress port for the incoming datagram based on a destination address contained in the incoming datagram (Paragraph 0074. Lookup destination address information to obtain destination port.);

an ARL table reader configured to perform a lookup of the ARL table based on a source address contained in the incoming datagram to determine whether the source address has been learned previously (Paragraph 0070. Determine that there is no corresponding entry for source address in the forwarding database.);

an ARL table writer configured to write an entry into the ARL table when the source address has not been learned previously (Paragraphs 0067; 0070. Source address learning.);

a global address determiner configured to determine whether the other network devices have learned the source address when the source address has been learned previously (Paragraph 0066. Forwarding databases have the same number of addresses. Paragraphs 0067; 0070. Determine

corresponding address in neighboring switches including whether the address has expired. Paragraph 0080. Determine that switch L2 has been updated with same address.); and

a learning message forwarder configured to relay a learning message with the source address to the other network devices when it is determined that the other network devices have not learned the source address (Paragraphs 0067; 0070; 0072. Send refresh packet for the source address to neighboring switches.).

Lu does not specifically teach of continuing to relay the learning message until the learning message is returned to the network device to the network device from one of the other from one of the other network devices.

Szczepanek teaches of learning source addresses, wherein a learning message comprising a source address to be learned is continued to relay from a network device to other network devices until the message is returned to the network device from one of the other network devices (col. 21, lines 25-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to continually relay a learning message from the network device to the other network devices until the learning message is returned to the network device from one of the other network devices. The motivation for the suggested combination is that Szczepanek's teachings would improve Lu's teachings by enabling each switch to learn the source address and preventing unnecessary sending of packets that would occupy bandwidth.

As per claim 4, Lu teaches the method wherein the network device and the other network devices are connected through a connection and continuing to relay the learning message comprises continuing to relay the learning message through the connection. Lu does not specifically teach that the connection is a ringed connection and relaying is through the ringed connection.

Szczepanek teaches of relaying a message through a ring connection (col. 21, lines 30-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the switches to be connected through a ringed connection and relay a learning message through the ring connection. The motivation for the suggested combination is that Szczepanek's teachings would improve Lu's teachings by providing high data rate communication and enabling each switch to learn the source address while preventing unnecessary sending of packets that would occupy bandwidth.

As per claim 7, Lu and Szczepanek teach the method as recited in claim 1. Lu further teaches wherein receiving an incoming datagram comprises receiving an incoming data packet (Paragraph 0074. Incoming packet.).

As per claim 11, Lu teaches the network device, wherein the network device and the other network devices are connected through a connection and the relaying means comprises ring relaying means for relaying the learning message through the connection. Lu does not specifically teach that the connection is a ringed connection and relaying is through the ringed connection.

Szczepanek teaches of relaying a message through a ring connection (col. 21, lines 30-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the switches to be connected through a ringed connection and relay a learning message through the ring connection. The motivation for the suggested combination is that Szczepanek's teachings would improve Lu's teachings by providing high data rate communication and enabling each switch to learn the source address while preventing unnecessary sending of packets that would occupy bandwidth.

As per claim 12, Lu and Szczepanek teach the network device of claim 8. Lu further teaches wherein the network device is connected to the other network devices through one of a stacking port of the network device and an expansion port of the network device (Paragraph 0062. Stacked switches. Paragraph 0063. Connected by ports.).

As per claim 17, Lu teaches the network device, wherein the network device and the other network devices are connected through a connection and relaying means comprises ring relaying means for relaying a learning message through the connection. Lu does not specifically teach that the learning message forwarder comprises a ring forwarder configured to relay the message through the ringed connection.

Szczepanek teaches of relaying a message through a ring connection (col. 21, lines 30-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the switches to be connected through a ringed connection and relay a learning message through the ring connection. The motivation for the suggested combination is that Szczepanek's teachings would improve Lu's teachings by providing high data rate communication and enabling each switch to learn the source address while preventing unnecessary sending of packets that would occupy bandwidth.

As per claim 18, Lu and Szczepanek teach the network device as recited in claim 14. Lu further teaches wherein the network device is connected to the other network devices through one of a stacking port the network device and an expansion port of the network device (Paragraph 0062. Stacked switches. Paragraph 0063. Connected by ports.).

Claims 2, 9, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu and Szczepanek , in view of Kerstein, US Patent #6,111,874 (Kerstein hereinafter).

As per claim 2, Lu does not specifically teach the method of claim 1, wherein the method further comprises updating a hit bit in the ARL table when the source address has been learned previously.

Kerstein teaches of updating a hit bit when a source address has been learned previously (col. 7, lines 35-39. Set hit bit when IRC finds source address.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the ARL table as taught by Lu to comprise a hit bit that is updated when a source address has been learned previously as taught by Kerstein. The motivation for the suggested combination is that Kerstein's teachings would improve the suggested system by using the bit to implement an aging algorithm (col. 7, lines 38-39).

As per claim 9, Lu does not specifically teach the network device of claim 8, wherein the instructions, when executed by the one or more datagram processing devices, further provide for implementing updating means for updating a hit bit in the ARL table when the source address has been learned previously.

Kerstein teaches of updating a hit bit when a source address has been learned previously (col. 7, lines 35-39. Set hit bit when IRC finds source address.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the ARL table as taught by Lu to comprise a hit bit that is updated when a source address has been learned previously as taught by Kerstein. The motivation for the suggested combination is that Kerstein's teachings would improve the suggested system by using the bit to implement an aging algorithm (col. 7, lines 38-39).

As per claim 15, Lu does not specifically teach the network device of claim 14, wherein the instructions, when executed by the one or more datagram processing devices, further provide for implementing an updater for updating a hit bit in the ARL table when the source address has been learned previously.

Kerstein teaches of updating a hit bit when a source address has been learned previously (col. 7, lines 35-39. Set hit bit when IRC finds source address.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the ARL table as taught by Lu to comprise a hit bit that is updated when a source address has been learned previously as taught by Kerstein. The motivation for the suggested combination is that Kerstein's teachings would improve the suggested system by using the bit to implement an aging algorithm (col. 7, lines 38-39).

Claims 3, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu and Szczepanek, in view of Sampath et al. US Publication #2002/0037006 (Sampath hereinafter).

As per claim 3, Lu does not specifically teach the method of in claim 1, wherein determining whether the other network devices have learned the source address comprises examining a learned all devices tag for the source address in the ARL table.

Sampath teaches of determining whether other network devices have learned the source address comprises examining a learned all devices tag for the source address (Paragraph 0007; Claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the ARL table as taught by Sampath to comprise a learned all devices tag and to examine a learned all devices tag for the source address as taught by Sampath. The motivation for the suggested combination is that Sampath's teachings would improve the suggested system by providing high performance switching in a communications network (Paragraph 0003).

As per claim 10, Lu does not specifically teach the network device of claim 8, wherein the determining means comprises examining means for examining a learned all devices tag for the source address in the ARL table.

Sampath teaches of determining whether other network devices have learned the source address comprises examining a learned all devices tag for the source address (Paragraph 0007; Claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the ARL table as taught by Sampath to comprise a learned all devices tag and to examine a learned all devices tag for the source address as taught by Sampath. The motivation for the suggested combination is that Sampath's teachings would improve the suggested system by providing techniques to implement high performance switching in a communications network (Paragraph 0003).

As per claim 16, Lu does not specifically teach the network device of claim 14, wherein the global address determiner comprises an examiner configured to examine a learned all devices tag for the source address in the ARL table.

Sampath teaches of determining whether other network devices have learned the source address comprises examining a learned all devices tag for the source address (Paragraph 0007; Claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the ARL table as taught by Sampath to comprise a learned all devices tag and to examine a learned all devices tag for the source address as taught by Sampath. The motivation for the suggested combination is that Sampath's teachings would improve the suggested system by providing high performance switching in a communications network (Paragraph 0003).

Claims 6, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu and Szczepanek, in view of Kotzur et al. US Patent #6,094,434 (Kotzur hereinafter).

As per claim 6, Lu teaches the method of claim 4, wherein determining an egress port comprises flooding with the incoming datagram (Paragraph 0074. Broadcast the packet if the switch cannot obtain the destination port.). Lu does not explicitly teach of flooding to all ports when the lookup of the ARL table does not find a match with the destination address.

Kotzur teaches of flooding all ports when a lookup of the ARL table does not find a match with a destination address (col. 63, lines 2-13. If address not found, broadcast to all ports.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to flood all ports when a lookup of the ARL table does not find a match with a destination address as taught by Kotzur. The motivation for the suggested combination is that Kotzur's teachings would improve the suggested system by ensuring that the packet is transmitted to an appropriate destination device (col. 63, lines 9-10).

As per claim 13, Lu teaches the network device of claim 8, wherein the means for determining an egress port comprises a flooding means for flooding with the incoming datagram when the lookup of the ARL table does not find a match with the destination address (Paragraph 0074. Broadcast the packet if the switch cannot obtain the destination port.). Lu does not explicitly teach of flooding to all ports when the lookup of the ARL table does not find a match with the destination address.

Kotzur teaches of flooding all ports when a lookup of the ARL table does not find a match with a destination address (col. 63, lines 2-13. If address not found, broadcast to all ports.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to flood all ports when a lookup of the ARL table does not find a match with a destination address as taught by Kotzur. The motivation for the suggested combination is that Kotzur's

teachings would improve the suggested system by ensuring that the packet is transmitted to an appropriate destination device (col. 63, lines 9-10).

As per claim 19, Lu teaches the network device of claim 14, wherein the egress port determiner comprises a port flooder configured to flood the incoming datagram when the lookup of the ARL table does not find a match with the destination address (Paragraph 0074. Broadcast the packet if the switch cannot obtain the destination port.). Lu does not explicitly teach of flooding to all ports when the lookup of the ARL table does not find a match with the destination address.

Kotzur teaches of flooding all ports when a lookup of the ARL table does not find a match with a destination address (col. 63, lines 2-13. If address not found, broadcast to all ports.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to flood all ports when a lookup of the ARL table does not find a match with a destination address as taught by Kotzur. The motivation for the suggested combination is that Kotzur's teachings would improve the suggested system by ensuring that the packet is transmitted to an appropriate destination device (col. 63, lines 9-10).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action

is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. J./
Examiner, Art Unit 2454

/NATHAN FLYNN/
Supervisory Patent Examiner, Art Unit 2454